CLAIM AMENDMENTS

Claim 1 (Currently Amended)

A process for separating and identifying intact microbes while maintaining the microbes intact comprising:

(a) obtaining a sample comprising one or more intact microbes/cells from a substrate containing said microbes/cells;

(b) introducing said sample into a passageway having a fluid therein;

(c) separating said one or more microbes/cells in said fluid by means of ~~an electric field~~ capillary electrophoresis so as to cause said one or more microbes/cells to move in said fluid and to separate one from another and from any other components in said sample while maintaining said microbes/cells intact; and

(d) analyzing said separated intact microbes/cells so as to identify said microbes/cells,

wherein said fluid comprises a dilute water soluble polymer that focuses said microbes in said passageway during said separating step.

Claim 2 (Canceled)

Claim 3 (Original)

The process of claim 1 wherein said passageway is a conventional capillary tube or a microchip fluidic device.

Claim 4 (Original)

The process of claim 1 wherein said analysis is conducted by spectroscopy, mass spectrometry or electrochemical means.

Claim 5 (Original)

The process of claim 1 wherein the substrate is a foodstuff, a dietary supplement, water, animal, plant, soil, or air.

Claim 6 (Currently Amended)

A process for diagnosing a disease caused by microbes comprising:

(a) obtaining a sample containing one or more intact microbes from an organism stricken with a disease caused by said microbes;

(b) introducing said sample into a passageway having a fluid therein;

(c) separating said one or more microbes in said fluid by means of ~~an electric field~~ capillary electrophoresis so as to cause said one or more microbes to move in said fluid and to separate one from another and from other components in said sample while maintaining said microbes intact;

(d) analyzing said separated intact microbes so as to identify said microbes; and

(e) associating said microbe with a disease so as to diagnose said disease,

wherein said fluid comprises a dilute water soluble polymer that focuses said microbes in said passageway during said separating step.

Claim 7 (Canceled)

Claim 8 (Original)

The process of claim 6 wherein said passageway is a conventional capillary tube or a microchip system.

Claim 9 (Original)

The process of claim 6 wherein the organism is a plant or an animal.

Claim 10 (Currently Amended)

A process for determining the binding affinity of a drug/other substance with a microbe/cell comprising:

(a) obtaining a sample comprising one or more intact microbes/cells from a substrate containing said microbes/cells;

(b) combining the sample with a drug or other substance in a fluid media to form a suspension and to allow said microbe/cell to bind with said drug/other substance;

(c) introducing said suspension into a passageway having a fluid therein;

(d) subjecting said suspension to ~~an electric field~~ capillary electrophoresis so as to cause said microbes/cells, said drug/other substance and bound microbes/cells-drug/other substance to move in said fluid and to separate one from another while maintaining said microbes/cells, said drug/other substance and said bound microbes/cells-drug/other substance intact; and

(e) ~~analyze~~ analyzing said separated, intact bound microbes/cells-drug/other substance to determine their affinity for each other,

wherein said fluid comprises a dilute water soluble polymer that focuses said microbes/cells, said drug/other

substance and said bound microbes/cells-drug/other substance in said passageway during said subjecting step.

Claim 11 (Original)

The process of claim 10 wherein drug/other substance is an antibiotic or a prion.

Claim 12 (Original)

The process of claim 10 wherein said substrate is an animal.

Claim 13 (Original)

The process of claim 10 wherein said passageway is a capillary tube or microfluidic device.

Claim 14 (Canceled)

Claim 15 (Currently Amended)

A process for determining the viability of microbes/cells comprising:

(a) obtaining a sample containing one or more intact microbes/cells from a substrate containing said microbes/cells;

(b) dying said sample with a dye that causes viable microbes/cells to be distinguished from non-viable microbes/cells;

(c) introducing said dyed sample into a passageway having a fluid therein;

(d) separating said one or more microbes/cells in said fluid by means of ~~an electric field~~ capillary electrophoresis so as to cause said one or more microbes/cells to move in said fluid and to separate one from another and from other components in said sample while maintaining said microbes/cells intact; and

(e) analyzing said separated intact microbes/cells so as to identify viable microbes/cells from non-viable microbes/cells based on said dye,

wherein said fluid comprises a dilute water soluble polymer that focuses said microbes/cells in said passageway during said separating step.

Claim 16 (Canceled)

Claim 17 (Original)

The process of claim 15 wherein said passageway is a conventional capillary tube or a microchip capillary system.

Claim 18 (Withdrawn)

In a microfluidic device having an injector, a passageway, a detector and a CPU, the improvement comprising said detector is a Mei light scattering apparatus or laser induced fluorescence apparatus for detecting microbes/cells.

Claim 19 (Withdrawn)

The improved microfluidic device of claim 18 wherein said passageway is washed with a suspension intact of microbes/cells before conducting the detection.

Claim 20 (Withdrawn)

The improved microfluidic device of claim 18 wherein a fluorescent dye is employed to detect the viability of intact microbes/cells.

Claim 21 (Withdrawn)

The improved microfluidic device of claim 18 wherein the device is set to detect a single type of microbe/cell.

Claim 22 (New)

The process of claim 1 wherein said water soluble polymer is polyethylene oxide, polyethylene glycol,

polyvinyl alcohol, linear polyacrylamide, hydroxypropylcellulose, hydroxyethylcellulose, methylcellulose, amylase or dextrin.

Claim 23 (New)

The process of claim 6 wherein said water soluble polymer is polyethylene oxide, polyethylene glycol, polyvinyl alcohol, linear polyacrylamide, hydroxypropylcellulose, hydroxyethylcellulose, methylcellulose, amylase or dextrin.

Claim 24 (New)

The process of claim 10 wherein said water soluble polymer is polyethylene oxide, polyethylene glycol, polyvinyl alcohol, linear polyacrylamide, hydroxypropylcellulose, hydroxyethylcellulose, methylcellulose, amylase or dextrin.

Claim 25 (New)

The process of claim 15 wherein said water soluble polymer is polyethylene oxide, polyethylene glycol, polyvinyl alcohol, linear polyacrylamide, hydroxypropylcellulose, hydroxyethylcellulose, methylcellulose, amylase or dextrin.

Claim 26 (New)

A process for separating and identifying intact microbes while maintaining the microbes intact comprising:

(a) obtaining a sample comprising one or more intact microbes/cells from a substrate containing said microbes/cells;

(b) introducing said sample into a passageway having a fluid therein;

(c) separating said one or more microbes/cells in said fluid by capillary isoelectric focusing so as to cause said one or more microbes/cells to move in said fluid and to separate one from another and from any other components in said sample while maintaining said microbes/cells intact; and

(d) analyzing said separated intact microbes/cells so as to identify said microbes/cells,

wherein said fluid comprises an ampholyte that focuses said microbes/cells in said passageway during said separating step.

Claim 27 (New)

A process for diagnosing a disease caused by microbes comprising:

(a) obtaining a sample containing one or more intact microbes from an organism stricken with a disease caused by said microbes;

(b) introducing said sample into a passageway having a fluid therein;

(c) separating said one or more microbes in said fluid by capillary isoelectric focusing so as to cause said one or more microbes to move in said fluid and to separate one from another and from other components in said sample while maintaining said microbes intact;

(d) analyzing said separated intact microbes so as to identify said microbes; and

(e) associating said microbe with a disease so as to diagnose said disease,

wherein said fluid comprises an ampholyte that focuses said microbes in said passageway during said separating step.

Claim 28 (New)

A process for determining the binding affinity of a drug/other substance with a microbe/cell comprising:

(a) obtaining a sample comprising one or more intact microbes/cells from a substrate containing said microbes/cells;

(b) combining the sample with a drug or other substance in a fluid media to form a suspension and to allow said microbe/cell to bind with said drug/other substance;

(c) introducing said suspension into a passageway having a fluid therein;

(d) subjecting said suspension to capillary isoelectric focusing so as to cause said microbes/cells, said drug/other substance and bound microbes/cells-drug/other substance to move in said fluid and to separate one from another while maintaining said microbes/cells, said drug/other substance and said bound microbes/cells-drug/other substance intact; and

(e) analyzing said separated, intact bound microbes/cells-drug/other substance to determine their affinity for each other,

wherein said fluid comprises an ampholyte that focuses said microbes/cells, said drug/other substance and said bound microbes/cells-drug/other substance in said passageway during said subjecting step.

Claim 29 (New)

A process for determining the viability of microbes/cells comprising:

(a) obtaining a sample containing one or more intact microbes/cells from a substrate containing said microbes/cells;

(b) dying said sample with a dye that causes viable microbes/cells to be distinguished from non-viable microbes/cells;

(c) introducing said dyed sample into a passageway having a fluid therein;

(d) separating said one or more microbes/cells in said fluid by capillary isoelectric focusing so as to cause said one or more microbes/cells to move in said fluid and to separate one from another and from other components in said sample while maintaining said microbes/cells intact; and

(e) analyzing said separated intact microbes/cells so as to identify viable microbes/cells from non-viable microbes/cells based on said dye,

wherein said fluid comprises an ampholyte that focuses said microbes/cells in said passageway during said separating step.